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REPORT UPON
GROUND WATER CONDITIONS
WITHIN
SANTA CLARA VALLEY WATER CONSERVATION DISTRICT

March 14, 1967

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SANTA CLARA VALLEY WATER CONSERVATION DISTRICT

15420 ALMADEN ROAD • SAN JOSE, CALIFORNIA 95118 • PHONE 269-3650

FILE NO. __________

March 14, 1967

Honorable Board of Directors
Santa Clara Valley Water Conservation District
15420 Almaden Road
San Jose, California 95118

Gentlemen:

In accordance with Section 75570 of the Water Code, there is presented herewith an engineering report entitled, "Report Upon Ground Water Conditions Within The Santa Clara Valley Water Conservation District".

Respectfully submitted,

J Robert Roll

J. Robert Roll
Chief Engineer

gld

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INTRODUCTION

Section 75560 et seq. of the Water Code requires that an engineering report shall be prepared annually on the ground water conditions of the District. This report must provide the Board of Directors of the District with the information required for compliance with Section 75574 of said Code.

In accordance with Resolution No. 831 of the Board of Directors of this District which indicated the Board's intention to divide the District into two zones, this report provides the required engineering data for the two areas outlined in said Resolution.

Rainfall and Runoff

Rainfall in Santa Clara Valley for the 1965-66 season was below normal. The seasonal totals measured at six of the District's stations of long term record ranged from 59% of average at Lexington Reservoir to 82% of average at Coyote Reservoir. The total at the San Jose municipal weather station was 10.57 inches which is 75% of the long term average. Most of the rainfall occurred during November and December. By the end of December the San Jose station had recorded a total of 7.59 inches while the other 2.98 inches at this station fell in the six month period from January through June.

The total runoff of the valley streams was 54,604 acre-feet, of which 8,865 acre-feet wasted into San Francisco Bay.

Reservoir Storage and Releases

As an effect of subnormal rainfall none of the District's storage reservoirs filled to capacity. Out of a total capacity of 157,340 acre-feet, the maximum storage reached during the season was only 32,997 acre-feet — as compared to 82,859 acre-feet stored during the previous year. Table I shows the storage in each reservoir at the beginning and end of the season and the maximum storage during the season.

TABLE I

RESERVOIR STORAGE
(acre-feet)

Reservoir	Capacity	Oct. 1, 1965	Max. Storage	Oct. 1, 1966
Almaden	1,960	386	633	141
Anderson	91,300	11,206	11,206	698
Calero	10,410	4,288	4,288	323
Coyote	24,510	1,555	10,191	868
Guadalupe	3,460	255	1,173	455
Lexington	21,430	2,246	2,703	698
Stevens Creek	3,860	346	2,393	207
Vasona	410	386	410	407
Total	157,340	20,668	32,997	3,797

Evaporation

The evaporation measured during the 1965-66 season at the District's evaporation stations is shown in Table II. Since the station at Coyote Reservoir was moved to Anderson Reservoir during the Season there are no seasonal totals shown in the Table for the two areas.

The total evaporation loss in the District's reservoirs during the 1965-66 season was 2,209 acre-feet. The evaporation losses from stream channels and percolation ponds was estimated at 410 acre-feet.

TABLE II

EVAPORATION (inches)

STATIONS

Month	Alamitos Perc. Ponds	Lexington Res.	Coyote Res.	Anderson Res.
Oct. '65	3.46	3.26	3.05	
Nov.	1.67	1.18	1.25	
Dec.	1.21	1.29	0.85	
Jan. '66	1.08	0.95	0.68	
Feb.	1.55	1.39	1.07	
March	2.77	2.28	2.00	
April	4.85	4.06	3.56	
May	5.73	4.70		
June	7.59	5.81		8.75
July	7.20	6.39		7.98
Aug.	7.22	6.70		8.45
Sept.	5.15	4.65		6.08
TOTAL	49.48	42.66		

CLOUD SEEDING

During the summer of 1965, cloud seeding equipment was purchased from Weather Modification Company. Since that time the Water District has operated the cloud seeding program in Santa Clara Valley. A facsimile machine, linked to the U. S. Weather Bureau circuit, was purchased and this unit provides weather maps and forecasts to aid in both the cloud seeding program and District operations.

The United States Bureau of Reclamation has been conducting a review of the evaluations of various cloud seeding projects. During 1966 the District was successful in having them assign a statistician to review the results of this District's program. His study indicated that Santa Clara Valley has experienced at least a 12% increase in rainfall due to cloud seeding.

IMPORTED WATER

A total of 34,850 acre-feet of imported water was delivered in 1966. The delivery schedule of the Santa Clara County Flood Control District called for a delivery of 37,600 acre-feet, but the State was unable to meet this schedule due to the limited capacity of an interim canal. This canal will no longer be needed after the spring of 1967 when the permanent facilities are in operation.

Percolation and/or Direct Use

The distribution of surface water for the past year is summarized in Table III.

TABLE III

SUMMARY OF SURFACE WATER FOR 1965-66 WATER YEAR (acre-feet)

	Natural Flow	Stored Water	Imported Water
Total runoff	54,604	-	-
Inflow to valley	30,925	36,860	30,167
Flow to S.F. Bay	8,803	62	0
Percolation and/or direct use in natural channels	15,910	19,181	10,216
Percolation and/or direct use in District facilities	6,212	17,617	19,951

The total natural percolation was 15,910 acre-feet while 73,177 acre-feet were diverted for direct use and percolated by the District.

GROUND WATER FLUCTUATION

For the entire District the ground water levels reflected the difference in rainfall conditions between the 1964-65 season (103 to 130% of normal) and 1965-66 season (65% of normal) with an increase in average depth to water of 8.5 feet between October, 1965 and October, 1966. The average depth to water in October, 1966 was 145.4 feet.

On Plates I and II are shown average depths to water for the entire District and in the seven geographic areas. Although there was a marked rise in ground water levels within about a mile of percolation facilities, there were declines in ground water levels at most of the major cones of depression in the valley between October, 1964 and October, 1966. (See Plates III and IV). This can be seen by comparing the ground water contour maps for these periods. The centers of the four major cones of depression are: near Fremont Avenue and Route 9; near Williams Road and San Tomas Creek; near Santa Clara Street and Coyote Creek and near Cropley Avenue and Berryessa Creek.

The explanation for the continuing drop in water levels in these areas is that the amount of ground water recharge available - including local sources and imported water - has not equalled the exceptionally large quantities of water being withdrawn by municipal well fields.

Near the cone of depression centered at Fremont Avenue and Route 9, static ground water levels were over 300 feet below the ground surface and several all-time low water levels were recorded. The amount of ground water pumped for municipal purposes in the vicinity of this cone of depression was about 15-20,000 acre-feet per year and the amount of recharge about 10-15,000 acre-feet per year.

Near the Williams Road and Santa Clara Street cones of depression, the annual ground water withdrawal for municipal purposes was about 75,000 acre-feet for the year and the ground water recharge about 50,000 acre-feet for the year. Thus, the shortage of water during the 1965-66 water year in these critical areas was on the order of 25,000 acre-feet.

The areas of heaviest pumpage in Santa Clara Valley coincide approximately with the areas of greatest ground water depression and the areas of maximum ground subsidence. The approximate annual ground water production from this zone is about 120,000 acre-feet. Due to the limited amount of imported water and subnormal rainfall conditions, this was about 30,000 to 35,000 acre-feet in excess of ground water replenishment in the 1965-66 water year.

On Plate V is shown the location of the ground water cross section (Plate VI). Some of the pertinent features shown on the cross section include:

1. Ground water levels at the edge of the valley are about equal to or above the ground water levels of 1942.
2. The zone of maximum ground water decline is about 12 miles wide in the center of the valley. The depth to water between 1942 and 1966 has increased by 75 to over 100 feet on the east side and over 200 feet on the west side of the zone.

In the Canoas area ground water levels at a nearby well field declined to the lowest levels since the wells were constructed in 1960-61 due to below normal rainfall and the shortage of water for percolation in nearby facilities (Coyote and Guadalupe Creeks, Alamitos and Los Capitancillos percolation ponds). The well field was temporarily abandoned due to decreased yield and increase in hardness of ground water from lower aquifers. Within 4 to 6 weeks after the percolation ponds were filled, ground water levels recovered over 50 feet. Well yields and water quality were restored and at present the well field is in operation.

Use of Imported Water

Another important aspect of the ground water fluctuation is the effect of the use of imported water for direct diversion and percolation. This effect can best be seen by comparing the ground water levels and rainfall data for the 1963-64 water year when no imported water was available and the 1965-66 season when imported water was used. Due to similar climatic conditions of these two years (rainfall about 65% of normal both years), the difference in the quantity of recharge to the ground water reservoir was essentially the amount of imported water used in 1965-66, or about 30,000 acre-feet.

During the 1963-64 season, the average depth to water increased from 132 feet to 147 feet and during the 1965-66 season the increase was from 137 feet to 145 feet. Thus, the amount of imported water used during 1965-66 resulted in 6.5 feet less decline than that which occurred in 1963-64.

The areas in the District where the effect of the imported water is most evident are near the percolation facilities in the Penitencia Creek, Los Gatos Creek and Guadalupe Creek systems.

In the Berryessa area (near Penitencia Creek) water levels have recovered from 50 feet to 75 feet, reaching all time highs and seasonal highs at several wells. The average depth to water in Berryessa at the end of September, 1966, was 157.1 feet, which is the highest seasonal level in this area since 1953. Within a mile of Los Gatos Creek percolation facilities, the water levels in many of the major producing wells are 5 feet to 50 feet higher than for comparable periods in 1964 while there has been a 10% to 20% increase in ground water pumpage from these wells between 1964 and 1966.

There is a basis for optimism concerning ground water conditions in these critical areas in the zones of maximum ground subsidence.

1. Much larger quantities of ground water can be recharged annually than were recharged during the past three years. Due to a shortage of imported and local water, the District's recharge facilities were operated on a very limited capacity. A considerable portion of this potential increase in percolation can be achieved near areas of overpumpage.

2. Expansion of District's distribution facilities will bring water to the Stevens Creek area where the potential percolation capacity is on the order of 20,000 acre-feet per year.

3. Due to a guaranteed year-around supply of imported water for recharge, larger quantities of ground water will be available from aquifers nearer recharge sites and out of the zone of serious ground subsidence.

Based on the present availability of local and imported water for recharge, there is a potential for an increase in ground water production near recharge facilities and away from the overpumped zone on the order of 25,000 to 50,000 acre-feet per year. When import waters from Pacheco and South Bay Aqueducts are at maximum, this potential increase in ground water production will amount to about 120,000 acre-feet per year.

By shifting the ground water production areas closer to recharge facilities (where geologic conditions are much less conducive to ground subsidence) and by increasing use of treated surface water in the center of the valley, the elimination of areas of serious overpumpage and ground subsidence could be greatly accelerated.

WATER QUALITY

Samples of ground water were collected from about 40 wells throughout the valley in 1966. Analyses for certain common mineral constituents are made by the State of California as part of a cooperative study with the District. Ground waters were analyzed before imported water was used in order to determine the natural water quality characteristics. Ground waters have been analyzed since the use of imported water for recharge, but no obvious changes have been noted to date.

GEOLOGIC AND HYDROLOGIC INVESTIGATIONS

Geologic investigations consisted mainly of electric soundings supplemented by test drilling and study of existing well logs. Hydrologic investigations were made using inflow tests, percolation checks, in creeks and water balance studies in portions of north Santa Clara Valley.

The main areas covered in the studies were:

1. Coyote Creek from Anderson Dam to Story Road.
2. Stevens Creek near the newly constructed recharge water pipe line.
3. All major creeks - electrical resistivity studies were made in various creek channels and adjacent lands.

The estimated percolation capacity of stream beds which have been investigated to date in north Santa Clara Valley is on the order of 500 acre-feet per day, if spreading dams are constructed. Percolation rate of potential offstream areas which have been investigated, where it would be feasible to develop recharge facilities, is estimated to be approximately 150 acre-feet per day. The tabulation of creeks, number of spreading dams and percolation rates, and the offstream areas and estimated percolation rates is shown below:

Creek	No. of Dams	AF/Day Perc.Rate	Offstream Area	AF/Day Rate
Stevens Creek (Base of dam to Middlefield Road)	10	85	1. Near S.C. Pipeline and McClellan Rd. (25+ acres	75
Calabazas Crk. (Pipeline to El Camino)	0	5	2. Near S.C. Pipeline and Saratoga Crk. (10 acres	20
Saratoga Crk. (Pipeline to Pruneridge)	10	35	3. Near Ross Creek between Kirk and Jarvis (3 ac.)	5
San Tomas Crk. (Pipeline to Williams Rd.)	6	25	4. Coyote Creek (near Burnett Rd. (10 acres)	25
Los Gatos Crk. (Camden Ave. to Lincoln Ave.)	13	85	near Cochrane Rd. (15 acres)	30
				155
Ross Creek (Pipeline to Guad. Creek)	3	10		
Guadalupe Crk. (Downer Ave. to Malone Road)	5	30		
Penitencia Crk. (Piedmont Rd. to Coyote Crk.)	8	25		
Sierra Crk. (Near Sierra and Morrill)	4	8		
Coyote Crk. (Anderson Dam to Metcalf)	3	100		
Coyote Crk. (Metcalf Rd. to Hellyer Ave.)	3	80		
Coyote Crk. (Hellyer Ave. to Story Road)		10		
	65	498		

The results of the Coyote Creek and McClellan Road investigations appear to be of considerable importance.

Coyote Creek

The results of the Coyote Creek study could be useful in planning the integrated use of local surface waters, imported Pacheco water, and ground water in a large portion of Santa Clara Valley. Information on the location of permeable zones in and near the creek, percolation rates on various reaches of the creek and potential for ground water development and storage was obtained.

The creek was separated into three reaches - from Anderson Dam to Metcalf Road, from Metcalf Road to Hellyer Avenue, and from Hellyer Avenue to Story Road.

1. Anderson Dam to Metcalf Road - Annual percolation rates of up to 50,000 acre-feet could be attained. Volume of the dewatered zone under present usage varies from 10,000 to 30,000 acre-feet. To sustain higher recharge rates and prevent water logging the amount of ground water withdrawal would have to be greatly increased. An estimated 30,000 to 40,000 acre-feet per year could be exported from this portion of the basin for M & I use.

   By integrating flood control design with percolation facilities in this area an additional percolation capacity of 30 acre-feet per day and sub-surface storage capacity of about 10,000 acre-feet could be obtained. By controlling water levels in the basin it would be possible to salvage as much as several thousand acre-feet per year of storm runoff by diverting it to percolation facilities.

2. Metcalf Road to Hellyer Avenue - Annual percolation rates of about 25,000 acre-feet could be attained. Due to the limited size of this portion of the ground water basin and the present low rate of ground water usage, this amount of percolation could cause excessively high ground water levels in some years. It is estimated that when this area is fully developed and Pacheco water is available for recharge, the annual yield of ground water would be on the order of 40,000 to 50,000 acre-feet per year.

3. Hellyer Avenue to Story Road - Percolation rates of less than 5,000 acre-feet per year have been attained on this reach of the creek while the annual ground water pumpage from wells in the area is about 20,000 acre-feet. The decline of ground water level since 1942 is in excess of 150 feet and ground subsidence is a serious problem.

Ground water recharge is limited by an impermeable zone which extends from the surface to depths of 10 feet to over 50 feet throughout most of the area in and adjacent to the creek. According to logs of wells, dry gravel zones 20 feet to over 150 feet thick have been encountered immediately underlying the impermeable surface zone.

It appears that recharge wells would be a feasible method for recharging this portion of the basin. The wells could be constructed in the creek bottom and at the proposed pond sites of the Coyote Park chain. Twenty recharge wells (average depth 75 feet) would have an estimated recharge capacity of 5000 to 10,000 acre-feet per year.

4. McClellan Road near Stevens Creek Pipeline - In the vicinity of McClellan Road the newly constructed Stevens Creek Pipeline crosses the largest permeable sand and gravel zone that has been delineated in Santa Clara Valley. It is over 2,000 feet wide, 50 feet to over 100 feet thick, and has been traced over a mile in length. The ground water level is over 200 feet deep at the location of the proposed percolation facilities. The transmissibility of this feature is approximately 10,000 to 15,000 acre-feet per year. More than 25 acres of land overlying this permeable zone are immediately adjacent to the new pipeline and additional land is served by existing irrigation system pipelines. By constructing percolation ponds adjacent to the Stevens Creek Pipeline, and in areas served by existing pipelines it is estimated that 10 to 15 acre-feet per day or 5,000 acre-feet per year could be recharged in this area.

CONSTRUCTION FOR FISCAL YEAR 1965-66

A. Stevens Creek Project

A major program designed to alleviate current overdraft of groundwater in the Stevens Creek sub-area was initiated during the fiscal year. Previous studies have indicated groundwater shortages in the magnitude of 10,000 - 15,000 acre-feet annually occurring in this single west-side basin. In addition to shortages being experienced under present pumping conditions, consultation with private and municipal water agencies has indicated that future demand will be substantially increased, provided that water levels improve or become stabilized.

The District staff investigated numerous possibilities for the conveyance of supplemental water for recharge into Stevens Creek and other westside streams. Analyses were completed for those concepts having most favorable benefit-cost comparisons. A project plan thereby evolved which utilized existing pipelines of the District's Vasona Distribution System, extended easterly for connection to the Rinconada Force Main and northwesterly from Calabazas Creek for discharge into Stevens Creek. For both operational and economic reasons the Rinconada Force Main was substituted for the Vasona Canal Pumping Station as the source of raw water to satisfy supplemental westside recharge and surface irrigation requirements.

On March 8, 1966, an agreement with the Santa Clara County Flood Control and Water District was approved, specifying a cooperative program to construct the Stevens Creek project. Upon completion, scheduled for Spring, 1967, deliveries of 10 c.f.s. of water to Saratoga Creek, 5 c.f.s. to Calabazas Creek and approximately 10 c.f.s. to Stevens Creek will be attainable. Subsequent construction, contemplated for completion in fiscal year 1967-68 will increase potential Stevens Creek deliveries to 30 cubic feet per second.

B. Ford Road Percolation Area

Bids for the development of the Ford Road project were received on October 13, 1965, with subsequent award of contract to William D. Smith, Inc., on December 29, 1965. The project, involving a net removal of 267,200 cubic yards of material in and adjacent to the channel of Coyote Creek, is located approximately eight miles southeast of the City of San Jose. When completed, prior to October, 1969, the facility will represent a major augmentation to the District's Coyote Creek recharge program.

C. Guadalupe Percolation Area

L. C. Smith Company, under existing contract for construction of the Guadalupe Percolation Area downstream from Downer Avenue, was successful bidder on September 12, 1966 for additional work required on the Guadalupe Project. This project offered for sale approximately 42,000 cubic yards of excess material located in and adjacent to Guadalupe Creek between Branham Lane and Gandaubert Lane.

Completion of this additional project is required prior to October 31, 1968.

D. Sunnyoaks and Budd Percolation Areas

The three-acre Sunnyoaks and nine-acre Budd recharge areas were completed during the fiscal year. By designation of these areas as approved borrow sites for required San Tomas Expressway embankments, excavation of approximately 100,000 cubic yards was performed without cost to the District. Water will be conveyed to these new areas by means of the Page Distribution System.

PUMPING DRAFT

Under an agreement between this District and the Flood Control District, this District determines the amount of water diverted for irrigation from streams, canals or pipelines and the Flood Control District determines the amount pumped from wells.

By the beginning of the current fiscal year the Flood Control District had completed the installation of its agricultural meters. As a result, this year is the first in which agricultural use will not have to be estimated.

The amounts of water reported by various classes of users within the area North of Metcalf Road for the five reporting periods since the pump tax was instituted are listed in Table IV.

TABLE IV

WATER USE IN ACRE-FEET (NORTH OF METCALF ROAD)

PERIOD

TYPE OF USE	7/1/64 - 12/31/64	1/1/65 - 6/30/65	Total for Fiscal Yr.	7/1/65 - 12/31/65	1/1/66 - 6/30/66	Total for Fiscal Yr.	*7/1/66 - 12/31/66
M & I	69,868	48,807	118,675	68,436	61,873	130,309	74,790
Agric. (wells)	17,722	18,906	36,628	15,470	23,274	38,744	15,117
Agric. (surface)	841	2,276	3,117	2,279	3,549	5,828	1,432
Agric. total	18,563	21,182	39,745	17,749	26,823	44,572	16,549
Total Use	88,431	69,989	158,420	86,185	88,696	174,881	91,339

* These are amounts reported as of February 10, 1967 and are subject to revision due to delinquencies.

The total M & I use within that portion of the District subject to a pump tax for the 1965-66 fiscal year was 130,309 acre-feet. This is 7,309 acre-feet more than was estimated in the March 8, 1966 Report on Ground Water Conditions.

Past records of M & I use indicate that approximately 55.5% of the total annual M & I use occurs in the first half of the fiscal year. If this previous experience continues to prevail, the total use during the current fiscal year will be about 136,000 acre-feet or 13,000 acre-feet more than estimated in last year's Report.

On the basis of agricultural pumping draft quantities reported since the institution of a pump tax, it appears that the average annual agricultural draft, within that portion of the District subject to a pump tax, is about 38,000 acre-feet. This is considerably less than the amounts that apparently had been pumped prior to the institution of a pump tax. This probably is the result of a serious effort of agricultural users to make more efficient use of water than they previously had done.

On the basis of the information available, it is estimated that the total M & I use within that portion of the District subject to a pump tax will be 136,000 acre-feet during the 1967-68 fiscal year. Of this total M & I use, it is estimated that about 9,000 acre-feet will be supplied by the Rinconada Treatment Plant. This means that only 127,000 acre-feet of this M & I water will be pumped from the ground water supplies. This latter amount is the only portion of the total M & I use that is subject to this District's pump tax.

It is further estimated that the agricultural pumping draft within this same zone for the 1967-68 fiscal year will be 38,000 acre-feet. There will also be about 5,000 acre-feet diverted for direct surface agricultural use, making the total agricultural use for this period 43,000 acre-feet.

In the ad valorem tax zone of the District (that area southerly of Metcalf Road) there are no accurate records of either agricultural or M & I pumping draft. The quantities anticipated to be pumped from this area must be estimated from incomplete records.

It is estimated that during the 1967-68 fiscal year there will be 16,000 acre-feet of agricultural water pumped in this area. In addition there will be about 1,500 acre-feet of water diverted for surface agricultural delivery.

During the same period, it is estimated that the M & I use in the ad valorem zone will be 2,000 acre-feet.

INFORMATION REQUIRED BY WATER CODE

Tables V and VI present the information that is required by the Water Code to be included in this annual engineering report upon the groundwater conditions within the District.

Explanation of Items in Table V.

Item 1. The average annual overdraft for the immediate past ten water years is composed of two components. One is the loss of storage represented by the drop in the water level. The other is the water of compaction that has been squeezed out of the clay strata. This latter item is not replaceable, but it is considered as an overdraft item as it is an undesirable condition that should be eliminated.

Item 2. This quantity is the total loss of usable storage since the average depth to water was last at sixty feet from the surface. It is the amount of water that is needed to build the ground water supply up to this desired level.

Item 3. During the current water year, it is estimated that the average water level, in that portion of the District north of Metcalf Road, will have risen 12 feet which represents a gain in storage amounting to 72,000 acre-feet. When the estimated water of compaction is subtracted from this, the net recharge is 58,000 acre-feet.

Item 4. During the ensuing water year, it is estimated that the average water level, in that portion of the District north of Metcalf Road, will rise 4 feet. This represents an increase in storage of 24,000 acre-feet. By subtracting water of compaction in the amount of 14,000 acre-feet from this, it leaves a net recharge of 10,000 acre-feet.

Item 5. This represents the estimated loss of usable storage that, by the end of the current water year, will have accumulated since the average depth to water was last at sixty feet from the surface.

Items 6-12 (Self explanatory)

Explanation of Items in Table VI.

Item 1. In the area of the District south of Metcalf Road the water level is higher now than it was ten years ago, so there has been no overdraft, but rather an average recharge of 200 acre-feet per year.

Items 2-5 The average water level in this area is higher now than it was ten years ago because of the District's percolation program. There is, however, an overdraft of about 7,000 acre-feet due to the preceding dry year.

Items 6-12 (Self-explanatory)

RECOMMENDATIONS

In conformity with Resolution No. 831 of the Board of Directors of the Santa Clara Valley Water Conservation District, it is recommended that the Board establish a zone in which to levy a ground water extraction charge.

This zone should encompass all of the District except the area more particularly described in Appendix A.

It is further recommended that the ground water extraction charge be based upon an estimated pumping draft of 38,000 acre-feet of agricultural water, 127,000 acre-feet of municipal and industrial water and 5,000 acre-feet of surface-delivered agricultural water.

TABLE V

AREA NORTH OF METCALF ROAD

1.	Average annual overdraft for the immediate past 10 fiscal years	32,000 a.f./yr.
2.	Accumulated overdraft as of the last day of the preceding fiscal year	540,000 a.f.
3.	Estimated annual overdraft for the current fiscal year	-58,000 a.f.
4.	Estimated annual overdraft for the ensuing fiscal year	-10,000 a.f.
5.	Estimated accumulated overdraft as of the last day of the current fiscal year	468,000 a.f.
6.	Estimated amount of agricultural water to be withdrawn from the ground water supplies of the District for the ensuing fiscal year	38,000 a.f.
7.	Estimated amount of water needed for surface distribution for the ensuing fiscal year	5,000 a.f.
8.	Estimated total agricultural water needed during the ensuing fiscal year	43,000 a.f.
9.	Estimated amount of water other than agricultural water to be withdrawn from the ground water supplies of the District for the ensuing fiscal year	*127,000 a.f.
10.	Amount of water that is necessary for the replenishment of the ground water supplies of the District for the ensuing fiscal year	**165,000 a.f.
11.	Amount of water the District is obligated to purchase during the ensuing fiscal year	None
12.	Estimated total production of water from the ground water supplies of the District for the preceding fiscal year	169,053 a.f.

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* The estimated total non-agricultural use is 136,000 acre-feet. However, it is estimated that 9,000 acre-feet will be served from the Rinconada Treatment Plant and this amount is not subject to taxation by this District.

** This is the minimum amount required to provide for the estimated pumping draft during the ensuing fiscal year.

TABLE VI

AREA SOUTH OF METCALF ROAD

1.	Average annual overdraft for the immediate past 10 fiscal years	- 200 a.f./yr
2.	Accumulated overdraft as of the last day of the preceding fiscal year	7,000 a.f.
3.	Estimated annual overdraft for the current fiscal year	None
4.	Estimated annual overdraft for the ensuing fiscal year	None
5.	Estimated accumulated overdraft as of the last day of the current fiscal year	None
6.	Estimated amount of agricultural water to be withdrawn from the ground water supplies of the District for the ensuing fiscal year	16,000 a.f.
7.	Estimated amount of water needed for surface distribution for the ensuing fiscal year	1,500 a.f.
8.	Estimated total agricultural water needed for the ensuing fiscal year	17,500 a.f.
9.	Estimated amount of water other than agricultural water to be withdrawn from the ground water supplies of the District for the ensuing fiscal year	2,000 a.f.
10.	Amount of water that is necessary for the repenishment of the ground water supplies of the District for the ensuing fiscal year	*18,000 a.f.
11.	Amount of water the District is obligated to purchase during the ensuing fiscal year	None
12.	Estimated total production of water from the ground water supplies of the District for the preceding fiscal year	16,000 a.f.

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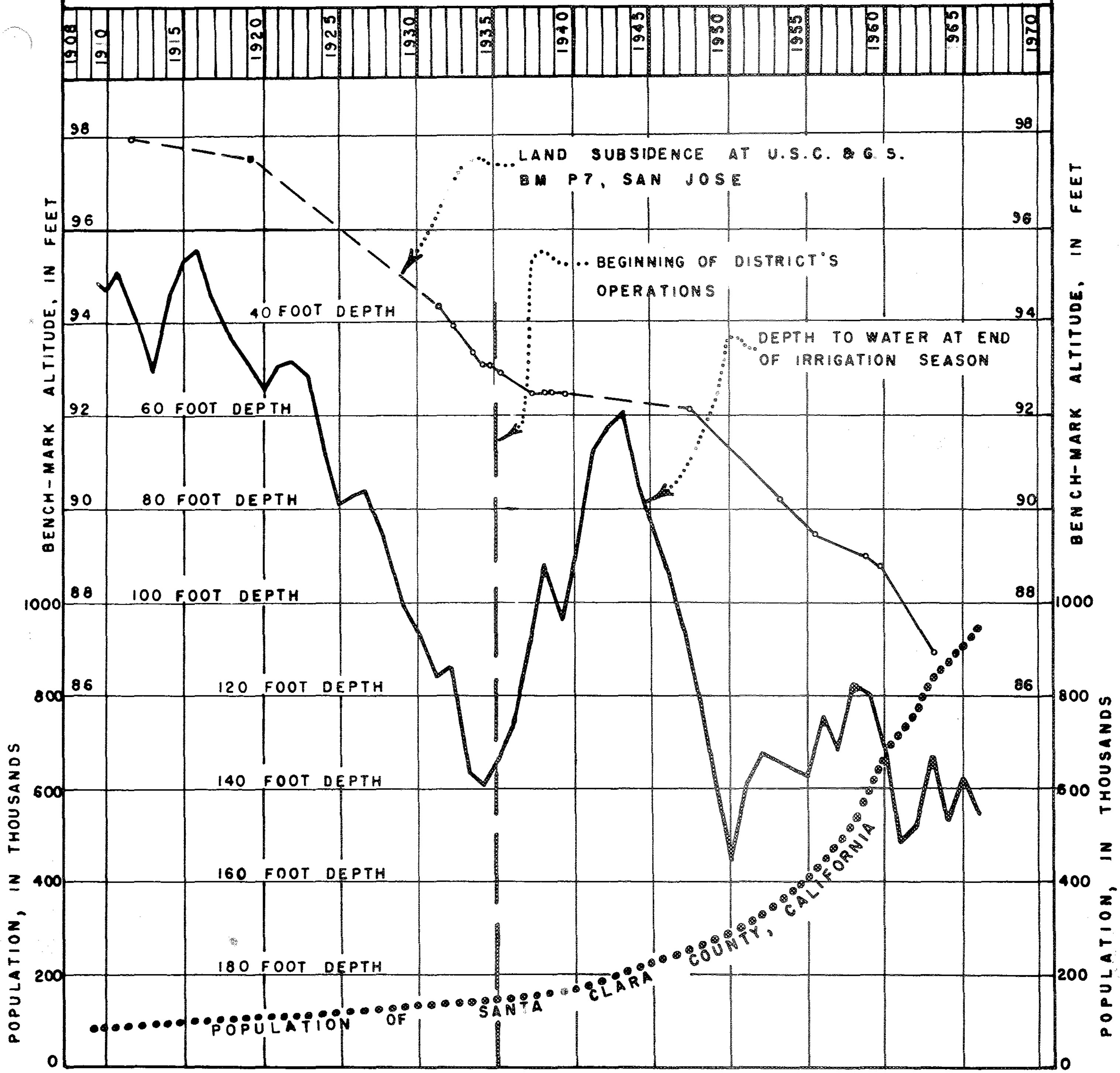
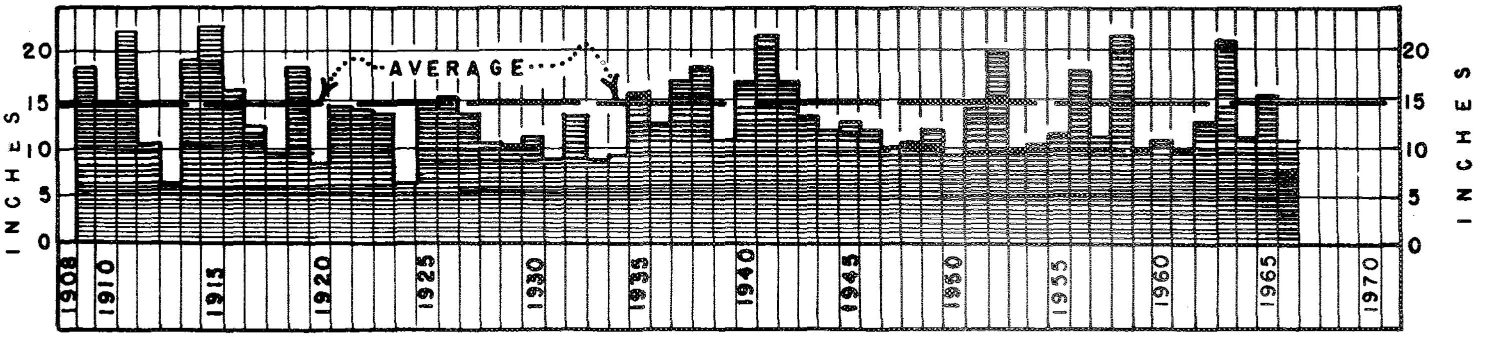
* This is the minimum amount required to provide for the estimated pumping draft during the ensuing fiscal year.

SANTA CLARA VALLEY WATER CONSERVATION DISTRICT

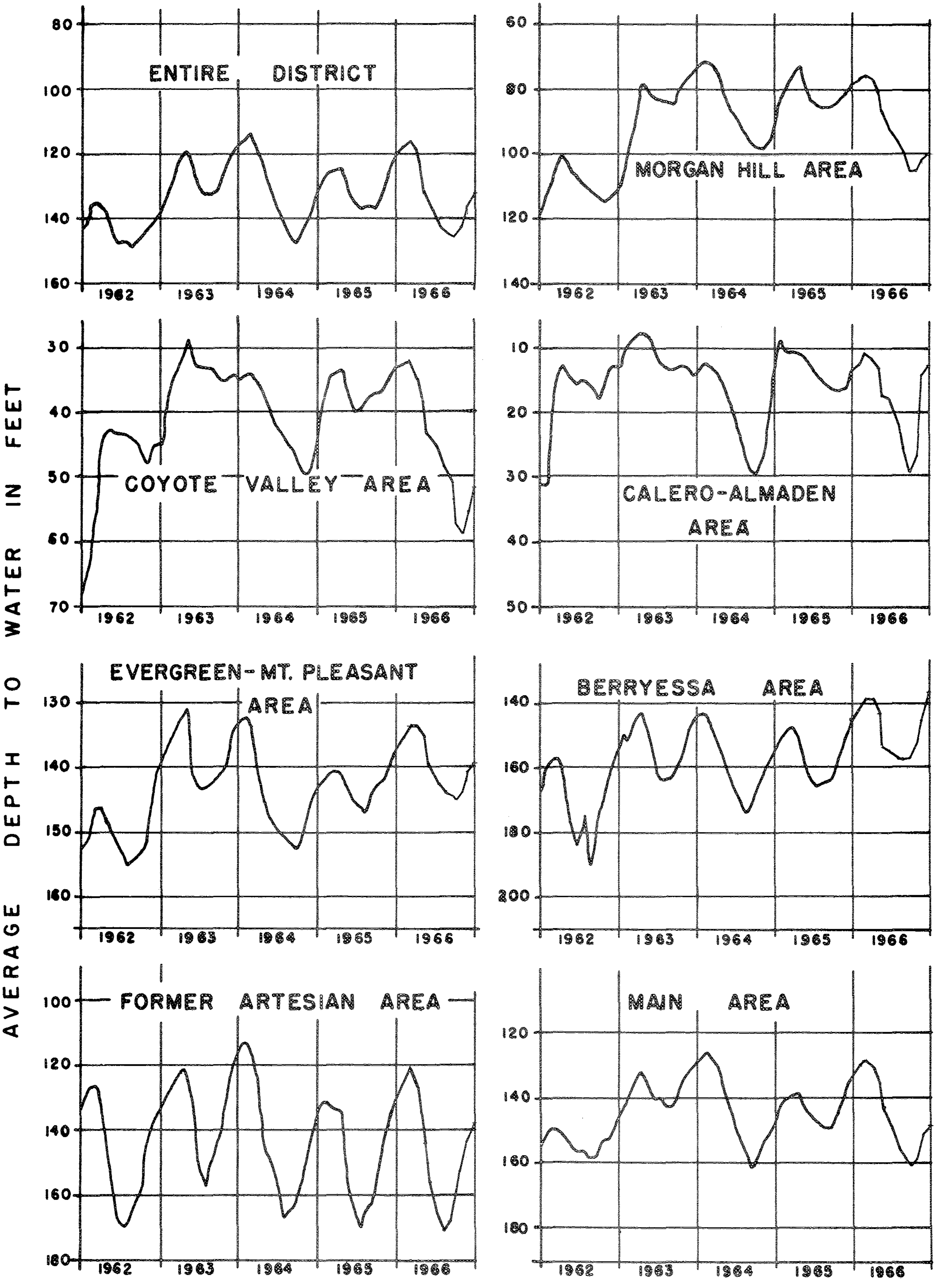
RAINFALL, AVERAGE DEPTH TO WATER, LAND SUBSIDENCE, POPULATION

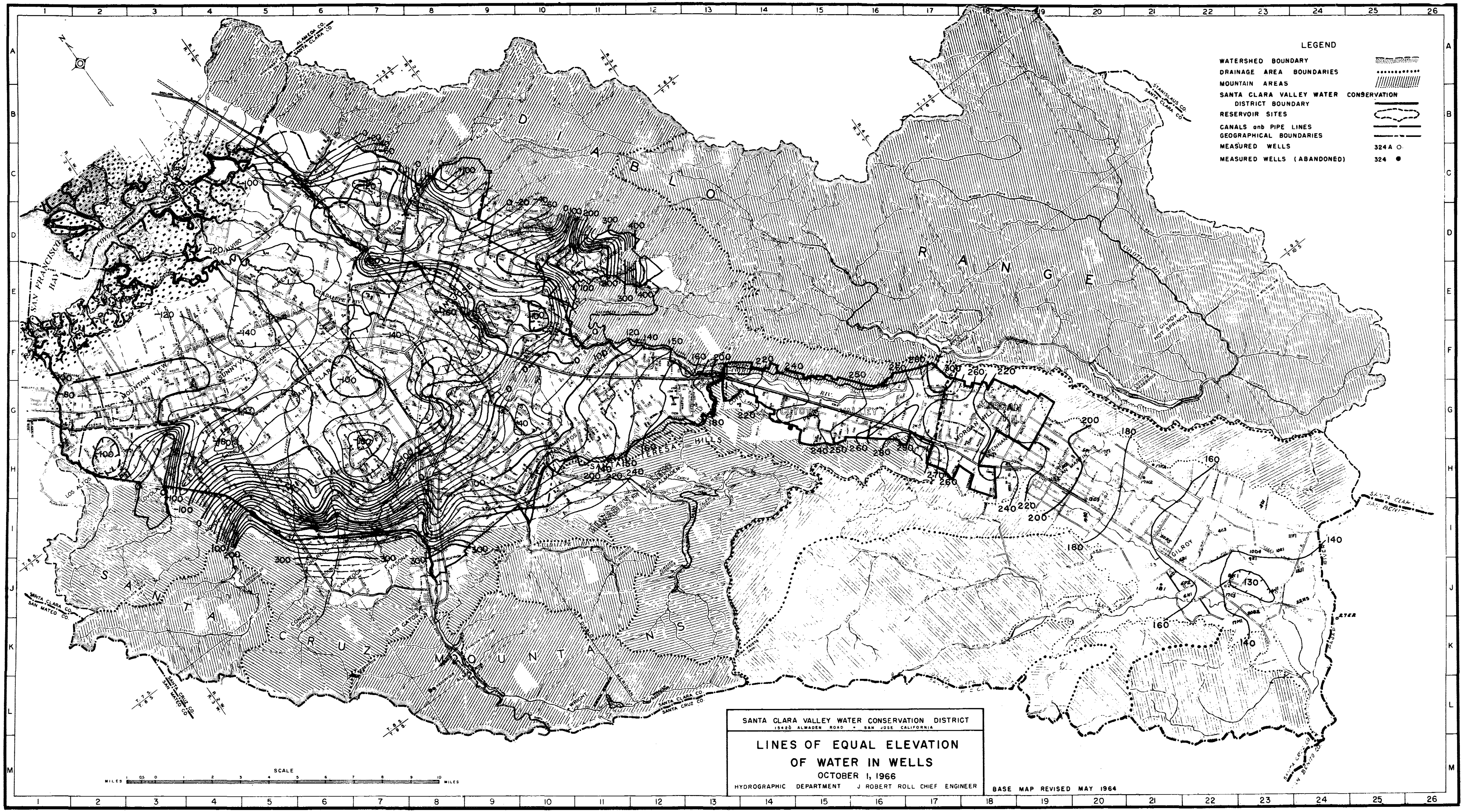


RAINFALL – CITY OF SAN JOSE, CALIFORNIA – WEATHER BUREAU RECORDS



FLUCTUATION OF AVERAGE WATER LEVEL





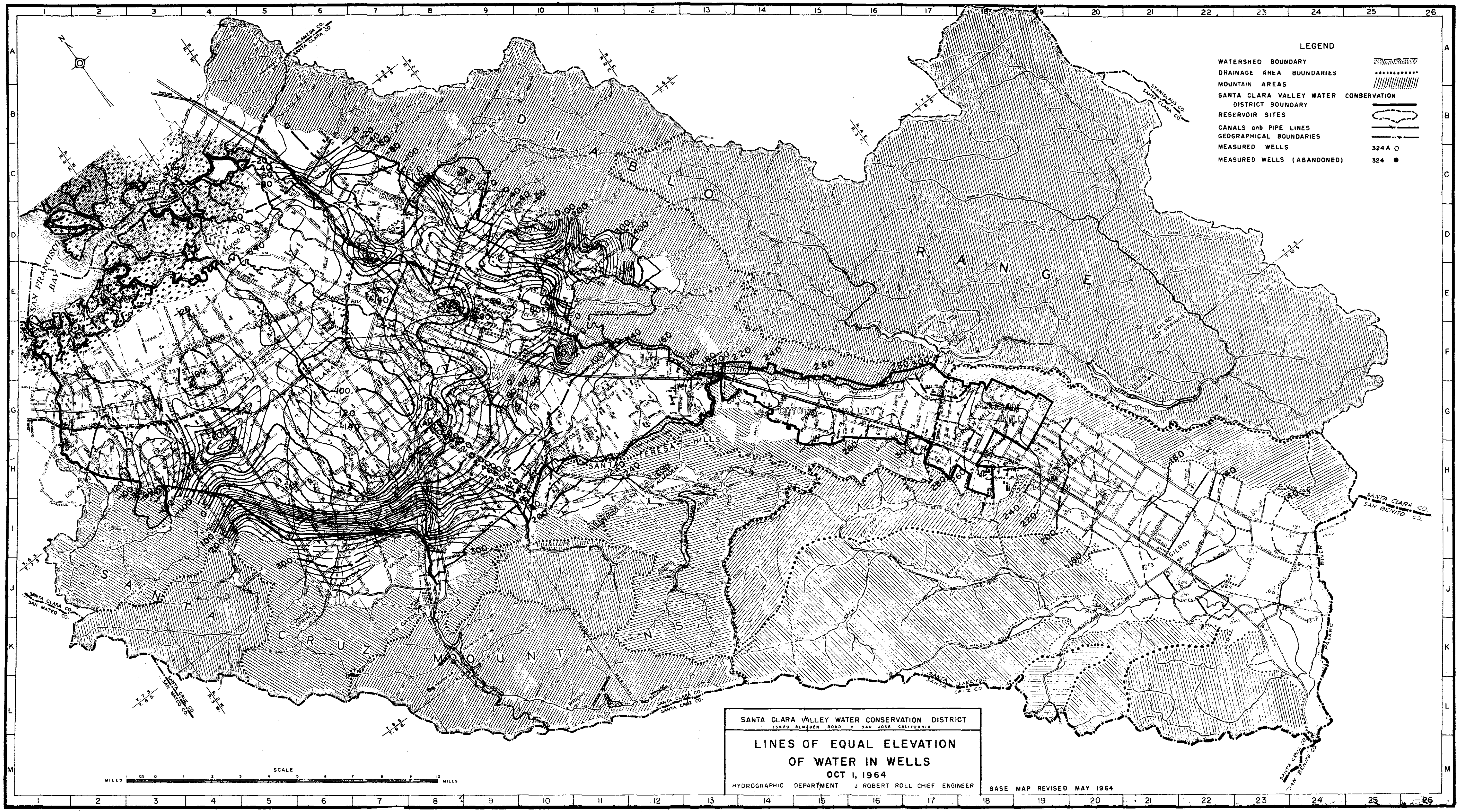
SANTA CLARA VALLEY WATER CONSERVATION DISTRICT
15420 ALMADEN ROAD • SAN JOSE CALIFORNIA

LINES OF EQUAL ELEVATION OF WATER IN WELLS

OCTOBER 1, 1966

HYDROGRAPHIC DEPARTMENT J ROBERT ROLL CHIEF ENGINEER

PLATE III



SANTA CLARA VALLEY WATER CONSERVATION DISTRICT
15420 ALMADEN ROAD • SAN JOSE CALIFORNIA

LINES OF EQUAL ELEVATION OF WATER IN WELLS

OCT 1, 1964

HYDROGRAPHIC DEPARTMENT J ROBERT ROLL CHIEF ENGINEER

BASE MAP REVISED MAY 1964

PLATE IV

SANTA CLARA VALLEY WATER CONSERVATION DISTRICT

CROSS-SECTION A-A LOCATION

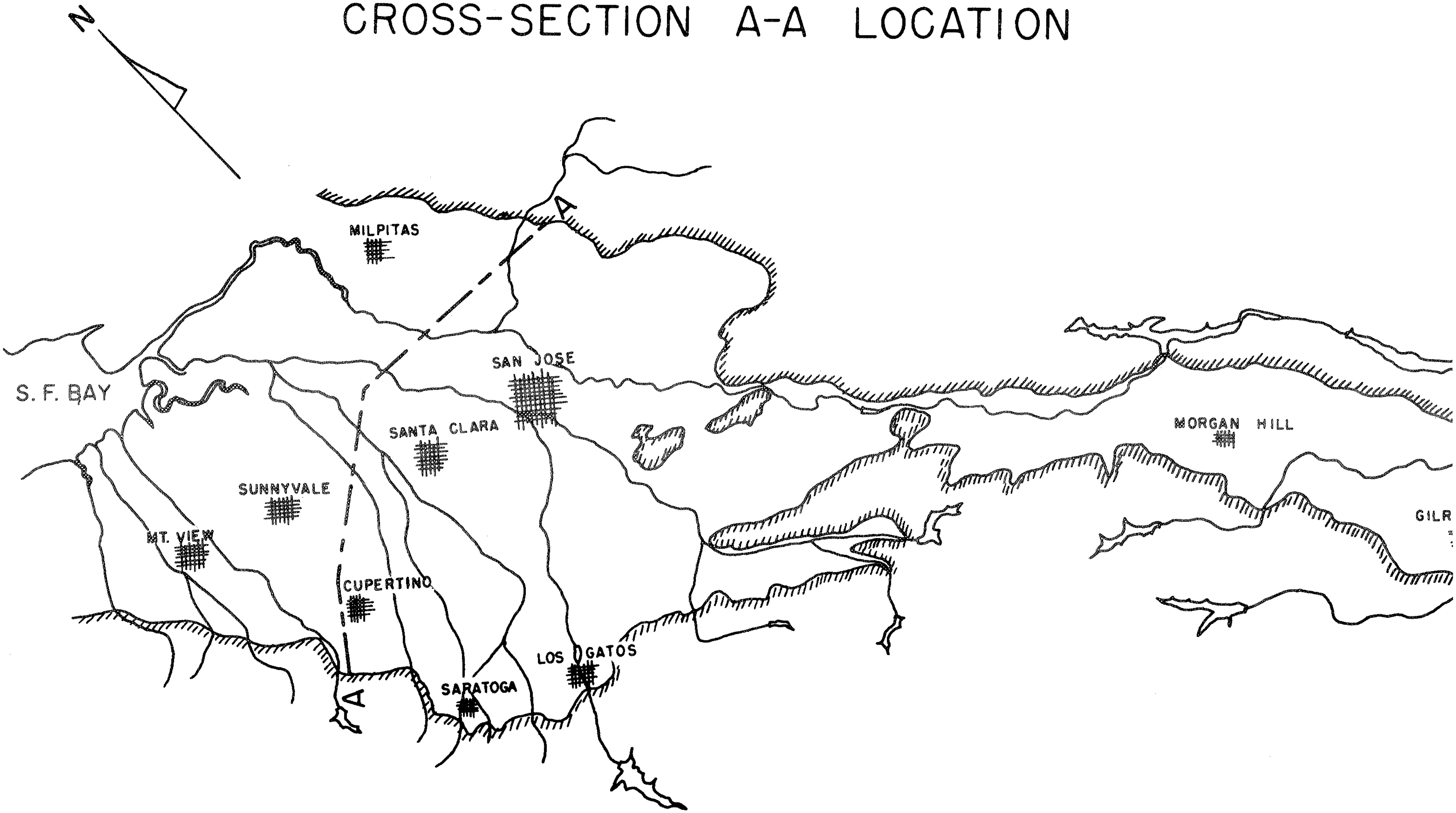


PLATE V

SANTA CLARA VALLEY WATER CONSERVATION DISTRICT

GROUND WATER LEVEL CROSS SECTION A-A OF SANTA CLARA VALLEY

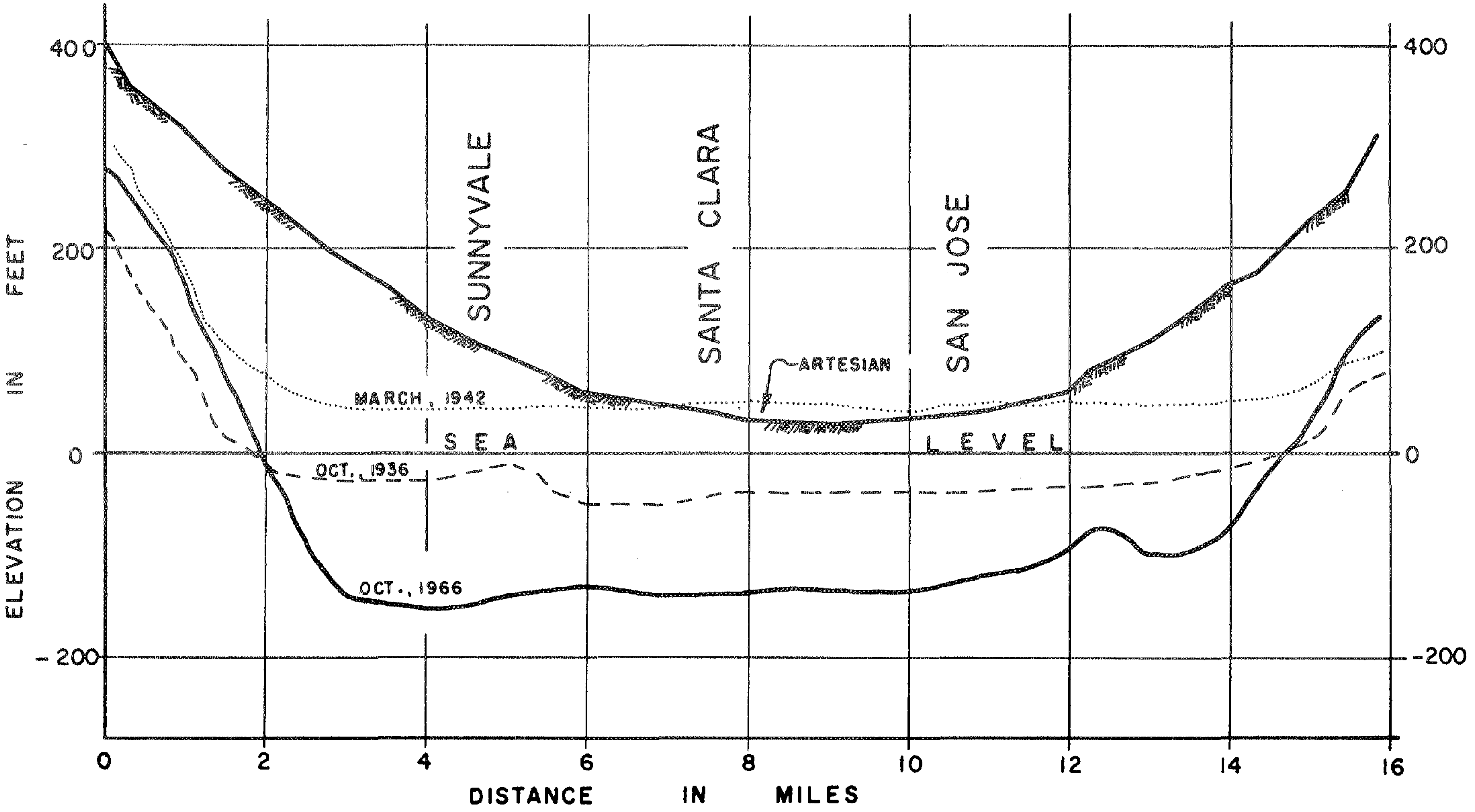


PLATE VI

APPENDIX A

NOTE: Attached to the original copy of this report is a detailed description of the ad valorem tax zone of the Santa Clara Valley Water Conservation District as called for by Resolution No. 831 of the Board of Directors of said District. A copy of said detailed description is on file at the office of the District: 15420 Almaden Road, San Jose, California.